



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

SW

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,491	02/11/2004	Rafail Zubok	532/2x2 (F-280 Cont I)	3254
27538	7590	10/22/2004	EXAMINER	
KAPLAN & GILMAN, L.L.P. 900 ROUTE 9 NORTH WOODBIDGE, NJ 07095			MILLER, CHERYL L	
			ART UNIT	PAPER NUMBER
			3738	

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/776,491	Applicant(s) ZUBOK ET AL.	
	Examiner Cheryl Miller	Art Unit 3738	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "the anterior flange" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Objections

Claim 3 is objected to because of the following informalities: The claim recites, "the apparatus includes a first member" and also recites, "the apparatus includes a second member". The applicant has used the phrase "includes", which is closed terminology. Therefore, if the apparatus *includes* a first member, the apparatus may only have a first member and not a second member. It is suggested to either change "includes" to --comprises-- or to change "the apparatus includes a second member" to recite --and a second member--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 7-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Khandkar et al. (US 2004/0133281 A1). See figures 16-21 and respective portions of the specification. Referring to claims 1-2, Khandkar discloses a method for replacing at least a portion of an intervertebral disc in a spinal column comprising removing the portion of the intervertebral disc from the spinal column and inserting an apparatus for replacing the portion of the intervertebral disc [0059], wherein the apparatus is operable to permit respective vertebral bones in the spinal column to articulate in flexion and extension in an anterior-posterior plane of the spinal column (fig.20), lateral bending in a lateral plane of the spinal column (fig.21), and axial rotation through a range of angles (fig. 19) without permitting the vertebral bone to substantially move in directions directed away from one another along a longitudinal axis of the spinal column [0080].

Referring to claim 3, Khandkar discloses the apparatus to include a first member (60) having a vertebral contact surface (68) and an articulation surface (72); and a second member (62) having a vertebral contact surface (68) and an articulation surface (74), the members (60, 62) operable to articulate with respect to one another, where the articulation surfaces (72, 74) engage one another (fig.16-21).

Referring to claims 9-12, Khandkar discloses the first articulation surface (72) to have a concave arc (seen in fig.20), with radius A about an axis substantially perpendicular to an anterior-posterior plane of the spinal column, and a convex arc (seen in fig.21), with radius B about an axis substantially perpendicular to the lateral plane of the spinal column, and the second articulation surface (74) to have a convex arc (seen in fig.20), with radius C about an axis

Art Unit: 3738

substantially perpendicular to the anterior-posterior plane of the spinal column, and a concave arc (seen in fig.21), with radius D about an axis substantially perpendicular to the lateral plane of the spinal column [0079].

Referring to claim 13, Khandkar discloses saddle shaped articulation surfaces (72, 74; see fig.16-21).

Referring to claim 7, Khandkar discloses the vertebral contact surfaces (68) to be curvate (see fig.16-21; convex or domed surfaces [0077]).

Referring to claim 8, Khandkar discloses at least one spike (66; [0077]) on the vertebral contact surfaces (68), and urging the spikes (66) into the vertebral bones.

Referring to claims 14-15, Khandkar discloses the apparatus to permit the vertebral bones to axially rotate through a limited range of angles, *about* plus/minus three degrees [0079, 0080].

Referring to claim 16, Khandkar discloses a method for replacing at least a portion of an intervertebral disc in a spinal column, comprising removing the portion of the intervertebral disc from the spinal column, and inserting an apparatus for replacing the portion of the intervertebral disc [0059], wherein the apparatus includes a first member (60) having a vertebral contact surface (68) and a saddle shaped articulation surface (72) and a second member (62) having a vertebral contact surface (68) and a saddle shaped articulation surface (74), an intervertebral space is defined between the vertebral bones, and the articulation surfaces are sized to engage one another in the space to enable the bones to flex, extend, and bend (fig.20, 21; 0080).

Referring to claim 17, Khandkar discloses the first articulation surface (72) to have a concave arc (seen in fig.20), with radius A about an axis substantially perpendicular to an anterior-posterior plane of the spinal column, and a convex arc (seen in fig.21), with radius B

Art Unit: 3738

about an axis substantially perpendicular to the lateral plane of the spinal column, and the second articulation surface (74) to have a convex arc (seen in fig.20), with radius C about an axis substantially perpendicular to the anterior-posterior plane of the spinal column, and a concave arc (seen in fig.21), with radius D about an axis substantially perpendicular to the lateral plane of the spinal column [0079].

Referring to claims 18 and 19, Khandkar discloses concave and respective convex articulation surfaces (fig.20, 21). Because extension/flexion, bending, and rotation are disclosed to all occur [0080], inherently the concave arcs are greater, they must be in order for movement to occur.

Claims 1-3 and 8-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Ferree et al. (US 2004/0024462 A1). Referring to claims 1-2, Ferree discloses a method for replacing at least a portion of an intervertebral disc in a spinal column comprising removing the portion of the intervertebral disc from the spinal column and inserting an apparatus for replacing the portion of the intervertebral disc [0002], wherein the apparatus is operable to permit respective vertebral bones in the spinal column to articulate in flexion and extension in an anterior-posterior plane of the spinal column, lateral bending in a lateral plane of the spinal column, and axial rotation through a range of angles without permitting the vertebral bone to substantially move in directions directed away from one another along a longitudinal axis of the spinal column [0007].

Referring to claim 3, Ferree discloses the apparatus to include a first member (top member, fig.3A, 3B) having a vertebral contact surface (top surface) and an articulation surface (bottom surface), and a second member (bottom member, fig.3A, 3B) having a vertebral contact

Art Unit: 3738

surface (bottom surface) and an articulation surface (top surface), the members operable to articulate with respect to one another, where the articulation surfaces engage one another (see figs).

Referring to claims 9-12, Ferree discloses the first articulation surface (bottom surface of top member in figs) to have a concave arc (fig.3B), with radius A about an axis substantially perpendicular to an anterior-posterior plane of the spinal column, and a convex arc (fig.3A), with radius B about an axis substantially perpendicular to the lateral plane of the spinal column, and the second articulation surface (top surface of bottom member) to have a convex arc (fig.3B), with radius C about an axis substantially perpendicular to the anterior-posterior plane of the spinal column, and a concave arc (fig.3A), with radius D about an axis substantially perpendicular to the lateral plane of the spinal column.

Referring to claim 13, Ferree discloses saddle shaped articulation surfaces (see figs; 0007).

Referring to claim 8, Ferree discloses at least one spike (projections 0009) on the vertebral contact surfaces, and urging the spikes into the vertebral bones.

Referring to claims 14-15, Ferree discloses the apparatus to permit the vertebral bones to axially rotate through a limited range of angles, *about* plus/minus three degrees (limit rotation, therefore, minimal rotation will occur, 0007).

Referring to claim 16, Ferree discloses a method for replacing at least a portion of an intervertebral disc in a spinal column, comprising removing the portion of the intervertebral disc from the spinal column, and inserting an apparatus for replacing the portion of the intervertebral disc [0002], wherein the apparatus includes a first member (top member in figs) having a

Art Unit: 3738

vertebral contact surface (top surface) and a saddle shaped articulation surface (bottom surface, 0007) and a second member (bottom member) having a vertebral contact surface (bottom surface) and a saddle shaped articulation surface (top surface, 0007), an intervertebral space is defined between the vertebral bones, and the articulation surfaces are sized to engage one another in the space to enable the bones to flex, extend, and bend (0007, see figs).

Referring to claim 17, Ferree discloses the first articulation surface (bottom surface of top member in figs) to have a concave arc (fig.3B), with radius A about an axis substantially perpendicular to an anterior-posterior plane of the spinal column, and a convex arc (fig.3A), with radius B about an axis substantially perpendicular to the lateral plane of the spinal column, and the second articulation surface (top surface of bottom member in figs) to have a convex arc (fig.3B), with radius C about an axis substantially perpendicular to the anterior-posterior plane of the spinal column, and a concave arc (fig.3A), with radius D about an axis substantially perpendicular to the lateral plane of the spinal column.

Referring to claims 18 and 19, Ferree discloses concave and respective convex articulation surfaces (fig.3A, 3B; 0007). Because extension/flexion, bending, and rotation are disclosed to all occur [0007], inherently the concave arcs are greater, they must be in order for movement to occur.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khandkar et al. (US 2004/0133281 A1) in view of Gordon (US 6,228,118 B1). Khandkar discloses a method of replacing a portion of an intervertebral disc substantially as claimed (see above). Khandkar discloses replacing the portion with an apparatus including two members (60, 62), which articulate with respect to one another (fig.20, 21), however do not disclose the members (60, 62) to have flanges with through holes. Gordon teaches in the same field of intervertebral discs, a method of replacing a portion of a disc with an apparatus having two members (10, 12), the members having flanges (16) with two through holes (22) for screws (14), in order to better secure the members to the vertebral bones (col.2, lines 15-38; col.3, lines 9-16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Khandkar's method of replacing a disc with an apparatus, with Gordon's teaching of having flanges with holes on the apparatus member, in order to replace the disc with an apparatus having a more secure attachment.

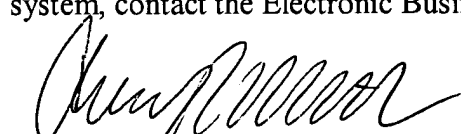
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl Miller whose telephone number is (703) 305-2812. The examiner can normally be reached on Monday through Friday from 7:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Corrine McDermott, can be reached on 308-2111. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3738

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cheryl Miller



BRUCE SNOW
PRIMARY EXAMINER